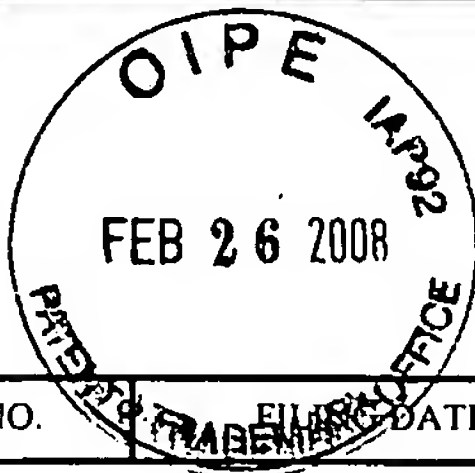




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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,946	08/13/2004	Roman Chistyakov	ZON-015	4945

23701 7590 02/21/2008  
RAUSCHENBACH PATENT LAW GROUP, LLC  
P.O. BOX 387  
BEDFORD, MA 01730

EXAMINER

SALZMAN, KOURTNEY R

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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02/21/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/710,946	<b>Applicant(s)</b> CHISTYAKOV, ROMAN	
	<b>Examiner</b> KOURTNEY R. SALZMAN	<b>Art Unit</b> 4128	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.  
     4a) Of the above claim(s) 23-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-22 and 45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>August 20, 2004, November 22, 2004, December 12, 2005, April 9, 2006 and May 22, 2007.</u> | 6) <input type="checkbox"/> Other: _____  |



## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of group I (claims 1-22 and 45) in the reply filed on November 21, 2007 is acknowledged.
2. Claims 23-44 are withdrawn.

### ***Summary***

3. This is the first Office Action on the merits of application 10/710,946 entitled Plasma Source with Segmented Magnetron Cathode, filed August 13, 2004. This application claims priority from provisional application 60/481,671, filed November 19, 2003.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 5, 9, 10, 12-16, 18, 22 and 45 rejected under 35 U.S.C. 102(b) as being anticipated by HAAG et al (US 6,093,293).

HAAG et al teaches a magnetron sputtering source comprising a process chamber, as shown in figures 1-3, as reference number 10, connected with valves for to feed gases into the chamber, as seen in figure 7 and stated in column 7, lines 1-5. Regarding the second limitation of claim 1, the process chamber is shown, in figure 4, to contain the anode, reference number 39.

Regarding the segmented magnetron cathode of the third limitation of claim 1, figure 1 shows target arrangements (separate individual cathodes), reference number 3, "connected to a generator 9, each of which generators can be controlled independently". (c. 7, l.12-15) Since each are connected to separate generators, they are shown to be electrically separated, or isolated from each other. The cathode or target arrangement segments are shown in figure 1, as reference number 3, to be adjacent to the anode segments 7, as they are shown next to each other. There are also permanent magnet segments "provided on each of the target arrangements", as stated in claim 9, lines 49-52, allowing for the cathode to function as a magnetron cathode. Regarding the switch and power supply limitations, these pieces have been combined into the generators. The electrical the power supply is the generator. The generators also feature time modulation feature, which operates as the switch, specifically modulating the traveling wave. (c. 7, lines 35-40) The switch electrical input takes the form of the power generated in the generator. The switch is then has multiple outputs to the cathode, or target arrangements, as shown in figure 1. (c.7, lines 45-48) The power supply outputs, are distributed to the switch then the cathodes using the time modulation, which allow the output to be "pulsed DC signals, or DC generators with intermediate generator output". (c.7, l.15-21) The time modulators are capable of generating a plasma train of voltages, through the time modulation controller.

Regarding claim 2, in conjunction with the rejection of claim 1, figure 1 shows multiple anode segments, with the reference number 7, all adjacent to the neighboring cathode or target arrangement segments, 3.

Regarding claim 5, in conjunction with the previous rejection of claim 1, the cathode segments are called target segments within HAAG et al, clearly anticipating the claimed sputtering target material.

Regarding claim 9, in conjunction with the previous rejection of claim 1, HAAG et al shows, in figure 4, the location of 3 cathode segments, yet doesn't require more of a cathode arrangement, or symmetric arrangement as shown. Therefore, what is shown is that the magnetron cathode can function as the cathode segments which are placed in a unique vertical plane, or an asymmetrical plane perpendicular to the substrate, as disclosed in the instant application.

Regarding claim 10, in conjunction with the previous rejection of claim 1, while HAAG et al does not explicitly state the size of the cathode segments should be uniform in size, by not showing any complete magnetron with all the segments, as in figure 4, it implicitly teaches, the sizing is irrelevant. Each cathode is powered separately, creating its own plasma, only the magnets which control the plasma should be approximately the size of the cathode segments. Since this

correlation is industry standard, the magnet arrangement shown in figure 7 indicates that the cathode segments could be of approximately sized to correspond with the three different magnet sizes of Z'1, Z'2 and Z'3.

Regarding claims 12-15, in conjunction with the previous rejection of claim 1, the apparatus necessary for the functionality of these claims is present in HAAG et al. The generator taught therein is able to deploy voltage pulses based on any modulation to function in any programmed pattern, complete with amplitude modulation (c.7, l.48-51) as the "invention allows very high flexibility for electrically operating the individual target arrangements 3". (c. 7, l. 66 - c.8, l. 5)

Regarding claim 16, in conjunction with the previous rejection of claim 1, the description of figure 7 states "at least two permanent magnet drums 43 are preferably provided on each of the target arrangements 3". (c. 9, l. 48-51) The two are shown proximate to each other in figure 7 itself.

Regarding claim 18, in conjunction with the previous rejection of claim 1, in column 9, lines 1-4, HAAG et al states there are gas attachments for the addition of a "working gas such as argon and/or with a reactive gas".

Regarding claim 22, in conjunction with the previous rejection of claim 1, the time modulating function, as discussed in the rejection of claim 1, functions to control the pulse sequencing as a controller would function.

Regarding claim 45, teaches a magnetron sputtering source comprising a process chamber, as shown in figures 1-3, as reference number 10, connected with valves for to feed gases into the chamber, as seen in figure 7 and stated in column 7, lines 1-5. The generators provide the means for generating pulses, as discussed in c. 7, l. 47-49. The generators also apply the means for applying both the first, second and subsequent pulses, in conjunction with the distribution wiring shown in figures 1-3, applying the pulses to each of the pulses to the target arrangements or cathodes of the magnetron.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over HAAG et al (US 6,093,293) in view of ROGERS, JR. et al (US 5,135,554).



HAAG et al teaches adjacent cathode and anode segments. HAAG et al also teaches the electrical manipulation of target arrangements, which function in the sputtering apparatus as cathodes.

HAAG et al fails to disclose a concentric orientation of cathode and anode or the use of more than one target material on each target or cathode segment.

Regarding claim 3, in conjunction with the previous rejections of claims 1 and 2, ROGERS, JR et al teaches an apparatus and method for sputtering, wherein in figure 3, the cathodes or targets of reference numbers 48, 50 and 52, are located central to the fiber, or workpiece, which generally has an opposing charge to the target, or anodic potential. Both pieces share a common central location, as the center of the fiber.

At the time of invention, it would be obvious for the anodes and cathodes of HAAG et al to have the common central orientation taught by ROGERS, JR. et al, because this orientation allows for total coating of the workpiece throughout the duration of the sputtering operation. This creating of a thin film around the entire workpiece or the deposition of a single film on a single surface is a matter of engineering choice, and desired characteristics of the sputtered product.

Therefore, the choice of centralized orientation of the anode and cathode would be obvious to one of ordinary skill in the art.

Regarding claim 6, in conjunction with the previous rejections of claim 1, ROGERS, JR. et al teaches an apparatus for use of continuous sputter coating, where the sputtering units 48, 50 and 52 "may include the same target material, or alternatively, the sputtering units may include a different target material". Sputtering units 48, 50 and 52 function as separate cathode segments as in the instant application.

At the time of invention, it would have been obvious to one of ordinary skill in the art to apply different target materials as in ROGERS, JR et al to the target arrangements of HAAG et al because, as stated in ROGERS, JR et al, the diversification of materials "provides for the sequential application of layers of different materials... in a single process". (c. 4, l. 54-55) This allows for easier manufacture, a consistent and long standing goal in the industry.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over HAAG et al (US 6,093,293) in view of BERGMAN (US 4,132,961).

HAAG et al teaches a sputtering source comprising multiple anode segments, as identified in the rejection of claim 1, and gas feed shown independent of the anode, which feeds to the sputtering chamber, as identified in the rejection of claim 18 above.

HAAG et al fails to teach these two pieces integrally constructed to form a single gas injector.

Regarding claim 4, in conjunction with the previous rejection of claim 1, BERGMAN teaches a flowing gas laser which utilizes a wire anode gas injector to feed gas into the discharge chamber, as stated in the abstract.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the gas valve and anode of HAAG et al into a single integral anode gas injector as in BERGMAN because it is obvious to make what is separate an integral piece (MPEP 2144.04). This assimilation of pieces allows for the gas to be ignited creating plasma just above the surface of the anode, still allowing for the same operating conditions as that created in the reference HAAG et al.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over HAAG et al (US 6,093,293) in view of SIECK et al (US 5,616,225).

HAAG et al teaches the cathode segments situated adjacent to each other and also the anode segments.

HAAG et al fails to teach the situation of the cathode pieces within a hollow cathode.

Regarding claim 7, in conjunction with the previous rejection of claim 1, SIECK et al teaches the use of multiple anodes in a magnetron for improving the uniformity of the plasma which organizes the cathodes within a hollow magnetron cathode tube, as is shown in figure 4 and discussed in the abstract.

At the time of invention, it would have been obvious to one of ordinary skill art to form the cathode segments of HAAG et al in the hollow cathode arrangement of SIECK et al because the use of this layout allows for "the uniformity of the rate of deposition across the substrate [to be] improved", as stated in the abstract of SIECK et al. Therefore, through improved characteristics, the combination of the anode and cathode segments of HAAG in the organization of SIECK et al is obvious.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over HAAG et al (US 6,093,293).

HAAG et al teaches all the limitations of claim 1.

HAAG et al fails to explicitly teach the cathode segments being located in a unique horizontal plane.

Regarding claim 8, in conjunction with the previous rejection of claim 1, HAAG et al does teach, in figure 4, the location of 3 cathode segments, yet doesn't require more of a cathode arrangement, or symmetric arrangement as shown.

Therefore, what is shown is that the magnetron cathode can function as the cathode segments are placed in a unique vertical plane, or an asymmetrical plane perpendicular to the substrate, as disclosed in the instant application.

At the time of invention, it would have been obvious to place the cathode segments in a unique horizontal orientation for deposition, since HAAG et al shows that the positioning of the cathode segments in a unique vertical orientation can yield successful, predictable deposition. With the independent control of each cathode segment, ignition to create plasmas of different depths would allow the plasma to continue aiding in the deposition process, not only making the outcome plausible, but predictably successful.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over HAAG et al (US 6,093,293) in view of HOFFMAN, JR et al (PG PUB US 2002/0157964).

HAAG et al teaches all the limitations of claim 1.

HAAG et al fails to teach the use of any transistors, including insulated gate bipolar transistor (IGBT).

HOFFMAN, JR et al teaches a method and apparatus for electrolytic cleaning comprising the use of an insulated gate bipolar transistor (IGBP) to "convert the DC output into AC through very fast on/off switching", as stated in paragraph 44.

At the time of invention, one of ordinary skill in the art would have been motivated to use a IGBP as disclosed in HOFFMAN, JR et al for the control of electronic pulses, in the sputtering device disclosed in HAAG et al because the use of an IGBP is well known in pulsed power devices, as it is highly efficient in pulsed, quickly switching electronic flows.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over HAAG et al (US 6,093,293) in view of GLOCKER et al(PG PUB US 2001/0050225).

HAAG et al teaches all the limitations of claims 1 and 16, including the use of a magnetic field to control the plasma allocation.

HAAG et al fails to teach the generation of an unbalanced magnetic field.

GLOCKER et al teaches an apparatus for ion bombardment of a substrate comprising unbalance magnetic fields. In paragraph 31, GLOCKER et al teaches "a first embodiment 50 of an unbalanced cylindrical magnetron", as shown in figure 4.

At the time of the invention, it would be obvious to one of ordinary skill in the art to use the magnetron apparatus as disclosed in HAAG et al to generate the unbalanced field as disclosed in GLOCKER et al because as GLOCKER et al discloses in paragraph 9, the layout of the plasma profile allows for "a consistent and predictable coating on substrates". It is obvious that consistency allows for successful and predictable manufacture, a goal of the any manufacturing process.

13. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over HAAG et al (US 6,093,293) in view of SOLTAN (US 3,609,658).

HAAG et al teaches all the limitations of claim 1, including the addition of gases (as stated in the rejection of claim 18) into the chamber through valves.

HAAG et al fails to teach the injection of excited and metastable atoms into the sputtering chamber.

Regarding claims 19 and 20, SOLTAN teaches a plasma display device which inserts a "flux of electrons, ions, and metastable atoms to flow through the display matrix 9". (c. 3, l. 65-68) The ions are analogous to the excited atoms of claim 19.

At the time of invention, it would have been obvious to one of ordinary skill in the art to combine the addition of ions and metastable atoms, as disclosed in SOLTAN, into the chamber and dispersion apparatus of HAAG et al because SOLTAN suggests in c. 3, l. 72 - c. 4, l.3, that the addition of these atoms lowers the firing potential (or ignition energy) causing the "cells or sites to be substantially uniform". This uniformity in the plasma display device would be valuable to a segmented cathode, as each cathode functions as a cell set, which would allow for uniform ignition of plasma over all the cathode cells.

14. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over HAAG et al (US 6,093,293) in view of RHODES (US 5,410,425).

HAAG et al teaches all the limitations of claim 1.

HAAG et al fails to teach the use of a pre-ionizing electrode in the chamber.

RHODES teaches a magnetron cathode comprising the use of a pre-ionization voltage pulse. In column 3, lines 46-50, RHODES states, "in operation, a pre-ionization voltage pulse from source 32 is applied across cathode 22 and anode 24... conducting plasma". This pre-ionization voltage functions as a pre-ionization electrode would in the plasma.



At the time of invention, one of ordinary skill in the art would be motivated to use the pre-ionization voltage of RHODES in the magnetron cathode of HAAG et al because RHODES et al teaches the pre-ionization operation functions to "guarantee that the current pulses on each side of the cell are well synchronized", which would be key when trying to consistently ionize over several cells, or cathode segments as in the instant application.

### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KOURTNEY R. SALZMAN whose telephone number is (571)270-5117. The examiner can normally be reached on Monday to Friday 7AM to 4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Barbara Gilliam can be reached on (571) 272-1330. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Barbara L. Gilliam/  
Supervisory Patent Examiner, Art  
Unit 4128

krs

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Electronic Filing System (EFS) Data  
Electronic Patent Application Submission  
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EFS ID: 67071  
Application ID: 10710946  
Title of Invention: PLASMA SOURCE WITH  
SEGMENTED MAGNETRON  
CATHODE  
First Named Inventor: Roman Chistyakov  
Domestic/Foreign Application: Domestic Application  
Filing Date: 2004-08-13  
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Submission Type: Information Disclosure  
Statement  
Filing Type:  
Confirmation number: 4945  
Attorney Docket Number: ZON-015




Total Fees Authorized:

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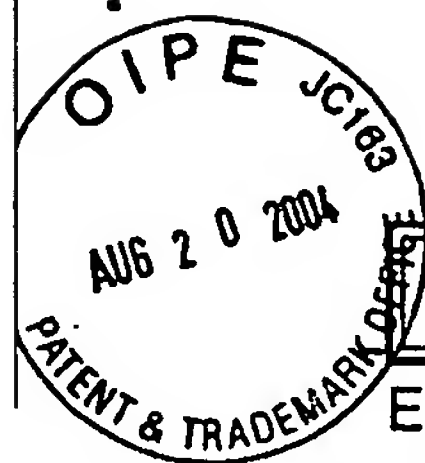


# TRANSMITTAL

Electronic Version v1.1  
Stylesheet Version v1.1.0

<b>Title of Invention</b>	<b>PLASMA SOURCE WITH SEGMENTED MAGNETRON CATHODE</b>							
<p>Application Number: 10/710946 </p> <p>Date: 2004-08-13</p> <p>First Named Applicant: Mr. Roman Chistyakov</p> <p>Confirmation Number: 4945</p> <p>Attorney Docket Number: ZON-015</p>								
<p>I hereby certify that the use of this system is for OFFICIAL correspondence between patent applicants or their representatives and the USPTO. Fraudulent or other use besides the filing of official correspondence by authorized parties is strictly prohibited, and subject to a fine and/or imprisonment under applicable law.</p> <p>I, the undersigned, certify that I have viewed a display of document(s) being electronically submitted to the United States Patent and Trademark Office, using either the USPTO provided style sheet or software, and that this is the document(s) I intend for initiation or further prosecution of a patent application noted in the submission. This document(s) will become part of the official electronic record at the USPTO.</p>								
<table border="1"><thead><tr><th>Submitted by:</th><th>Elec. Sign.</th><th>Sign. Capacity</th></tr></thead><tbody><tr><td>Dr. Kurt Rauschenbach Registered Number: 40,137</td><td>kr</td><td>Attorney</td></tr></tbody></table>			Submitted by:	Elec. Sign.	Sign. Capacity	Dr. Kurt Rauschenbach Registered Number: 40,137	kr	Attorney
Submitted by:	Elec. Sign.	Sign. Capacity						
Dr. Kurt Rauschenbach Registered Number: 40,137	kr	Attorney						

Documents being submitted us-ids	Files ZON-015IDS-usidst.xml us-ids.dtd us-ids.xsl
Comments	



## ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18  
Stylesheet Version v18.0

Title of  
Invention

PLASMA SOURCE WITH SEGMENTED MAGNETRON  
CATHODE

Application Number: 10/710946



Confirmation Number: 4945

First Named Applicant: Roman Chistyakov

Attorney Docket Number: ZON-015

Search string: ( 3666982 or 5795452 or 5846883 or 5973447  
or 6093293 or 6284106 or 6454920 or 6488822  
or 20010047760 or 20020153103 or  
20030209423 ).pn.

### US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
/K.S./	1	3666982	1972-05-30	Wiegand, Jr.		313	205
	2	5795452	1998-08-18	Kinoshita, et al.		204	298.37
	3	5846883	1998-12-08	Moslehi		438	711
	4	5973447	1999-10-26	Mahoney, et al.		313	359.1
	5	6093293	2000-07-25	Haag, et al.		204	298.12
	6	6284106	2001-09-04	Haag, et al.	B1	204	192.12
	7	6454920	2002-09-24	Haag, et al.	B1	204	298.12
✓	8	6488822	2002-12-03	Moslehi	B1	204	192.12

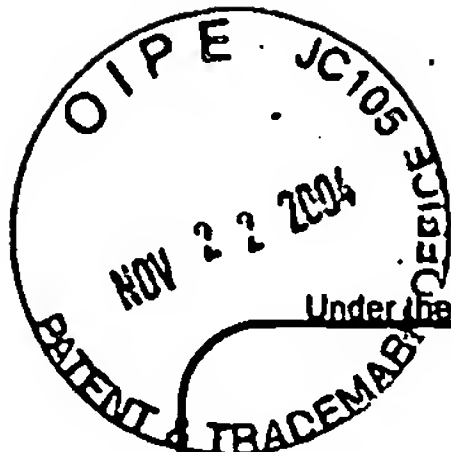
### US Published Applications

Note: Applicant is not required to submit a paper copy of cited US Published Applications

init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass
/K.S./	1	20010047760	2001-12-06	Moslehi	A1	118	723
/K.S./	2	20020153103	2002-10-24	Madocks	A1	156	345.46
/K.S./	3	20030209423	2003-11-13	Christie	A1	204	192.12

Signature

Examiner Name	Date
/Kourtney Salzman/	02/14/2008



PTO/SB/21 (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/710,946
	Filing Date	8/13/2004
	First Named Inventor	CHISTYAKOV
	Art Unit	1753
	Examiner Name	Not Yet Assigned
(Not Including Cited Reference(s)) Total Number of Pages in This Submission	4	Attorney Docket Number ZON-015

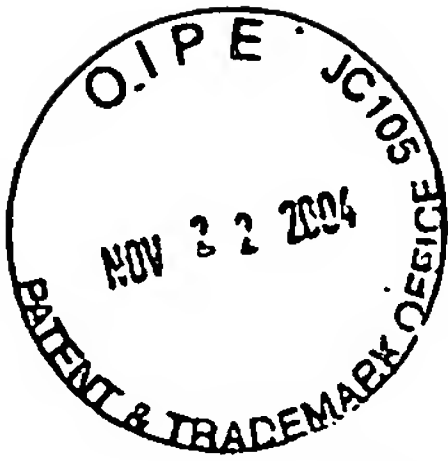
ENCLOSURES (Check all that apply)		
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<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
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<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
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<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		
SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT		
Firm or Individual name	Kurt Rauschenbach	
Signature		
Date	November 18, 2004	

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
Typed or printed name	Kurt Rauschenbach		
Signature		Date	November 18, 2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.





PATENT  
Attorney Docket No. ZON-015

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT(S): Roman Chistyakov  
SERIAL NO.: 10/710,946 GROUP NO.: 1753  
FILING DATE: August 13, 2004 EXAMINER: Not Yet Assigned  
TITLE: PLASMA SOURCE WITH SEGMENTED MAGNETRON CATHODE

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. BOX 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. §1.97, Applicants hereby make of record the references listed on the accompanying Form PTO-1449 for consideration by the Examiner in connection with the examination of the above-identified patent application. Copies of the references are enclosed.

**REMARKS**

In accordance with the provisions of 37 C.F.R. §1.97, this statement is being filed (CHECK ONE):

- ☒ (1) within three months of the Filing Date of a national application other than a continued prosecution application under § 1.53(d); or within three months of the date of entry of the national stage as set forth in § 1.491 in an international application; or before the mailing of a first Office action on the merits; or before the mailing of a first Office action after the filing of a request for continued examination under § 1.114; or
- ☐ (2) after the period defined in (1) but before the mailing date of a Final Action or Notice of Allowance, and
- ☐ the Statement required under § 1.97(e) below , OR
- ☐ the fee set forth in § 1.17(p), namely \$180.00, is included herein, or
- ☐ (3) after the mailing date of a Final Action or Notice of Allowance but before the payment of the Issue Fee, AND
- ☐ the Statement required under § 1.97(e) below; and
- ☐ the fee set forth in § 1.17, namely \$130.00 is included herein.

It is respectfully requested that each of the references shown on the attached Form PTO-1449 be made of record in this application.

#### STATEMENT

As required under §1.97(e), Applicants, through the undersigned, hereby state either that [check the appropriate space]:

- ☐ 1. That each item of information contained in the Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing date of the Information Disclosure Statement; or
- ☐ 2. That no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in §1.56(c) more than three months prior to the filing of the Information Disclosure Statement.

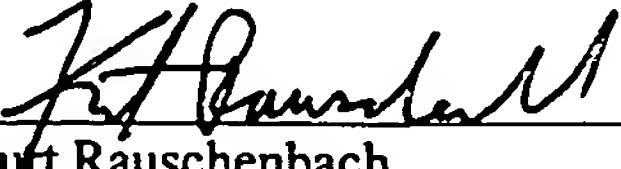
#### FEE AUTHORIZATION

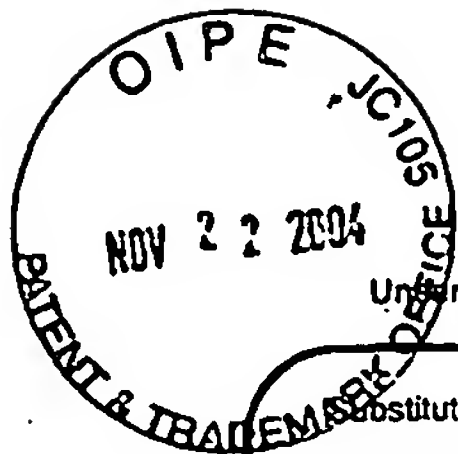
Should any fee associated with the submission of this paper not be attached hereto as a check, the Commissioner is authorized to charge the missing fee to our Deposit Account, No. 501211. Any overpayments should be credited to said Deposit Account.

Date: November 18, 2004  
Reg. No. 40,137

Tel. No.: (781) 271-1503  
Fax No.: (781) 271-1527

Respectfully submitted,

  
Kurt Rauschenbach  
Atty/Agent for Applicant(s)  
Rauschenbach Patent Law Group, LLC  
Post Office Box 387  
Bedford, MA 01730



PTO/SB/08b (08-03)

Approved for use through 06/30/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				<b>Complete If Known</b>	
				Application Number	10/710,946
				Filing Date	8/13/2004
				First Named Inventor	Roman Chistyakov
				Art Unit	<del>1733</del> 1795
				Examiner Name	<del>Not Yet Assigned</del> Kourtney Salzman
Sheet	1	of	1	Attorney Docket Number	ZON-015

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
/K.S./	C1	CHISTYAKOV, Roman, High-Power Pulsed Magnetron Sputtering, Application No. 10/065,277, filed: September 30, 2002.	
	C2	CHISTYAKOV, Roman, Methods And Apparatus For Generating High-Density Plasma, Application No. 10/065,629, filed: November 4, 2002.	
	C3	CHISTYAKOV, Roman, High Deposition Rate Sputtering, Application No. 10/065,739, filed: November 14, 2002.	
	C4	CHISTYAKOV, Roman, High-Power Pulsed Magnetically Enhanced Plasma Processing, Application No. 10/065,551, filed: October 29, 2002.	
	C5	CHISTYAKOV, Roman, High Density Plasma Source, Application No. 10/249,595, filed: April 22, 2003.	
	C6	CHISTYAKOV, Roman, High-Density Plasma Source Using Excited Atoms, Application No. 10/249,844, filed: May 12, 2003.	
	C7	CHISTYAKOV, Roman, Generation of Uniformly-Distributed Plasma, Application No. 10/249,773; filed: May 6, 2003.	
	C8	CHISTYAKOV, Roman, Plasma Generation Using Multi-Step Ionization, Application No. 10/249,202, filed: March 21, 2003.	
	C9	CHISTYAKOV, Roman, Plasma Source With Segmented Cathode, Application No. 60/481,671, filed: November 19, 2003.	
	C10	CHISTYAKOV, Roman, Methods And Apparatus For Generating Strongly-Ionized Plasmas With Ionizational Instabilities, Application No. 10/708,281, filed: February 22, 2004.	

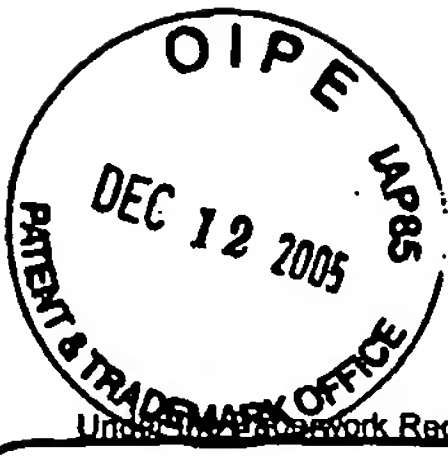
Examiner Signature	/Kourtney Salzman/	Date Considered	02/14/2008
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



1FW

PTO/SB/21 (09-04)  
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE  
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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing) (not including cited References) Total Number of Pages in This Submission	Application Number	10/710,946
	Filing Date	8/13/2004
	First Named Inventor	Chistyakov
	Art Unit	<del>4763</del> 1795
	Examiner Name	<del>Steven H. Versteeg</del> Kourtney Salzman
	Attorney Docket Number	ZON-015

ENCLOSURES (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input checked="" type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): PTO Form 1449 (1 pg.); Cited References B1-B2; and Return Receipt Postcard. <b>PCT SEARCH REPORT</b>
Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm Name	Rauschenbach Patent Law Group, LLC		
Signature			
Printed name	Kurt Rauschenbach		
Date	December 8, 2005	Reg. No.	40,137

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:			
Signature			
Typed or printed name	Kurt Rauschenbach	Date	December 8, 2005

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



PATENT  
Attorney Docket No. ZON-015

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT(S): CHISTYAKOV  
SERIAL NO.: 10/710,946 GROUP NO.: 1753  
FILING DATE: August 13, 2004 EXAMINER: Steven H. Versteeg  
TITLE: Plasma Source With Segmented Magnetron Cathode

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. BOX 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. §1.97, Applicant hereby makes of record the references listed on the accompanying Form PTO-1449 for consideration by the Examiner in connection with the examination of the above-identified patent application. Copies of references B1 and B2 are enclosed. Also, enclosed is a copy of the International Search Report for the Counterpart Application.

**REMARKS**

In accordance with the provisions of 37 C.F.R. §1.97, this statement is being filed (CHECK ONE):

- ☒ (1) within three months of the Filing Date of a national application other than a continued prosecution application under § 1.53(d); or within three months of the date of entry of the national stage as set forth in § 1.491 in an international application; or before the mailing of a first Office Action on the merits; or before the mailing of a first Office Action after the filing of a request for continued examination under § 1.114; or
- ☐ (2) after the period defined in (1) but before the mailing date of a Final Action or Notice of Allowance, and
- ☐ the Statement required under § 1.97(e) below, OR
- ☐ the fee set forth in § 1.17(p), namely \$180.00, is included herein, or
- ☐ (3) after the mailing date of a Final Action or Notice of Allowance but before the payment of the Issue Fee, AND
- ☐ the Statement required under § 1.97(e) below; and

☐ the fee set forth in § 1.17(p), namely \$180.00 is included herein.

It is respectfully requested that each of the references shown on the attached Form PTO-1449 be made of record in this application.

#### STATEMENT

As required under §1.97(e), Applicant, through the undersigned, hereby states either that [check the appropriate space]:

- ☐ 1. That each item of information contained in the Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing date of the Information Disclosure Statement; or
- ☐ 2. That no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in §1.56(c) more than three months prior to the filing of the Information Disclosure Statement.


#### FEE AUTHORIZATION

Applicant believes that there is no fee associated with this submission, however should it be determine that a fee is due, the Commissioner is hereby authorized to charge the missing fee to our Deposit Account No. 501211.

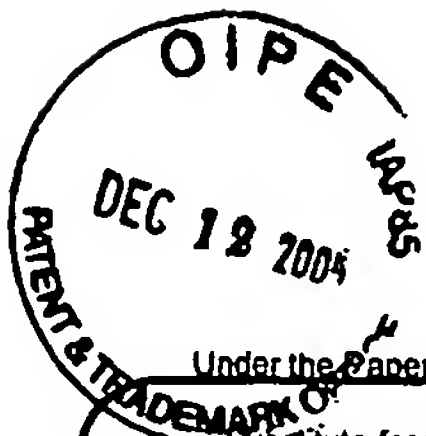
Date: December 8, 2005  
Reg. No. 40,137

Tel. No.: (781) 271-1503  
Fax No.: (781) 271-1527  
Doc-1186v1

Respectfully submitted,

  
Kurt Rauschenbach  
Attorney for Applicant  
Rauschenbach Patent Law Group, LLC  
Post Office Box 387  
Bedford, MA 01730





PTO/SB/08a (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet

1

of

1

**Complete if Known**

Application Number 10/710,946

Filing Date 8/13/2004

First Named Inventor Chistyakov

Art Unit ~~1753~~ 1795Examiner Name ~~Steven H. Versteeg~~ Kourtney Salzman

Attorney Docket Number ZON-015

**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
/K.S./	A1	US- 6,197,165 B1	03-06-2001	Drewery, et al.	
		US-			
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**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
/K.S./	B1	EP 1,046,727 A2	10-25-2000	Nippon Sheet Glass Co.		
/K.S./	B2	EP 1,146,139 A1	10-17-2001	Applied Materials, Inc.		

Examiner  
Signature

/Kourtney Salzman/

Date  
Considered

02/14/2008

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		10710946
	Filing Date		2004-08-13
	First Named Inventor	Chistyakov	
	Art Unit	<del>4753</del> 1795	
	Examiner Name	<del>Steven H. Versteeg</del> Kourtney Salzman	
	Attorney Docket Number	ZON-015	

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup>	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
/K.S./	1	0 831 679	EP	A1	1998-03-25	Tohoku Unicom Co., Ltd.		<input type="checkbox"/>
If you wish to add additional Foreign Patent Document citation information please click the Add button							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T <sup>5</sup>



**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

Application Number	10710946
Filing Date	2004-08-13
First Named Inventor	Chistyakov
Art Unit	<del>4753</del> 1795
Examiner Name	<del>Steven H. Versteeg</del> Kourtney Salzman
Attorney Docket Number	ZON-015

	1		<input type="checkbox"/>
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If you wish to add additional non-patent literature document citation information please click the Add button

**EXAMINER SIGNATURE**

Examiner Signature	/Kourtney Salzman/	Date Considered	02/14/2008
--------------------	--------------------	-----------------	------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

Application Number	10710946
Filing Date	2004-08-13
First Named Inventor	Chistyakov
Art Unit	1753
Examiner Name	Steven H. Versteeg
Attorney Docket Number	ZON-015

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

- ☐ See attached certification statement.
- ☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- ☒ None

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/kr/	Date (YYYY-MM-DD)	2006-03-29
Name/Print	Kurt Rauschenbach	Registration Number	40137

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		10710946
	Filing Date		2004-08-13
	First Named Inventor	Chistyakov	
	Art Unit	<del>1759</del> 1795	
	Examiner Name	<del>Steven H. Versteeg</del> Kourtney Salzman	
	Attorney Docket Number		ZON-015

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STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

Application Number	10710946
Filing Date	2004-08-13
First Named Inventor	Chistyakov
Art Unit	<del>4753</del> 1795
Examiner Name	<del>Steven H. Versteeg</del> Kourtney Salzman
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<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

Application Number	10710946
Filing Date	2004-08-13
First Named Inventor	Chistyakov
Art Unit	1753
Examiner Name	Steven H. Versteeg
Attorney Docket Number	ZON-015

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Kurt Rauschenbach/	Date (YYYY-MM-DD)	2007-05-22
Name/Print	Kurt Rauschenbach	Registration Number	40137

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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<b>Notice of References Cited</b>	Application/Control No. 10/710,946	Applicant(s)/Patent Under Reexamination CHISTYAKOV, ROMAN	
	Examiner KOURTNEY R. SALZMAN	Art Unit 4128	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-3,609,658	09-1971	Soltan, Parviz	345/67
*	B	US-2001/0050225	12-2001	Glocker et al.	204/298.18
*	C	US-5,410,425	04-1995	Rhodes, Mark A.	359/254
*	D	US-2002/0157964	10-2002	Hoffman et al.	205/670
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*	F	US-5,135,554	08-1992	Rogers et al.	65/446
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